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EXAMINER

JOO, JOSHUA

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/033,146	Applicant(s) CHEN ET AL.	
	Examiner JOSHUA JOO	Art Unit 2454	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-23, 25-34, 36-45, 47-55, 58 and 60-68 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-23, 25-34, 36-45, 47-55, 58, 60-68 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Detailed Action

1. This Office action is in response to communication dated 08/25/2008.
Claims 1-3, 6-23, 25-34, 36-45, 47-55, 58, 60-68 are pending for examination.

Response to Arguments

2. Applicant's arguments filed 08/25/2008 have been fully considered but they are not persuasive.
Applicants argued that:

3. (1) Regarding the rejection of claims under 35 U.S.C. 112, first paragraph, Applicants respectfully submit that all of the descriptions listed describe the wait request as "other than a request for information." This is necessary so since none of the descriptions listed describes the wait request as requesting information. Since none of the descriptions of a wait request listed by the Office action describes the wait request as requesting information, the descriptions describe the wait request as "other than a request for information."

4. In response, Examiner respectfully disagrees that Applicant's specification provides support for a wait request as "other than a request for information." MPEP 2173.05(i) states that "The mere absence of a positive recitation is not basis for an exclusion." Therefore, the absence of the specification in describing a wait request as requesting information does not provide basis for to exclude the wait request as "other than a request for information." Furthermore, in Remarks, page 24, Applicant stated, "The specification discloses that a wait request could be a request for information." Therefore, the specification does describe wait request as a request for information.

5. (2) Regarding the rejection of claims under 35 U.S.C. 112, second paragraph, Applicants respectfully point out that the Specification positively recites alternatives to the claim limitations in question, thus the explicit exclusion of those alternatives is allowable. For example, the Specification

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discloses that an incoming event could be an incoming telephone. See Specification, p. 13, line 26. The Specification also discloses that a wait request could be a request for information. See, e.g. Specification, p. 2, lines 19-21.

6. In response, Examiner respectfully disagrees that Applicant's specification positively recites alternatives elements. MPEP 2173.05(i) states that "If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims." The MPEP states that the alternatives elements described in the specification may be excluded. MPEP does not state that if specification recites alternatives to the claims limitations, the alternatives to the claims may be excluded. Applicant's recited section indicates that the incoming event could be a telephone call, and Applicants stated that the incoming event may be a request for information. However, Applicant's specification does not describe any alternatives nor does it positively recite that the incoming event is other a request for information. Applicant's specification also does not positively recite that the wait request is other than a request for information. Therefore, the claims are indefinite.

7. (3) Applicants respectfully submit that the above passage fails to teach the claimed feature "causing the web browser to provide a wait request to the web server." The Office action fails to recognize that the client is registering to receive specific messages which the client must explicitly request. See Gupta, 5:43-47. Without requesting the specific messages the client is interested in, registering is completely ineffective.

8. In response, Examiner respectfully disagrees that Gupta fails to teach the claimed feature. Gupta teaches,

- i) "The client process 110 notifies one or more application servers 20-24 of what messages the end user wishes to receive... The client process 110 may disconnect from the network 10 after sending this list of messages. When the client process 110 is ready to receive messages, it registers itself with the notification server 30. The registration information required by the notification 30 will comprise the identity of the client process 110 together with a receiving address identifier." (col. 5, lines 43-54)

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- ii) “In general if a message in which an end user is interested is generated by an application server 20-24 while the client process 110 acting on behalf of the end user is off-line, no notification will be sent. It is, however, possible for the notification server 30 to store notifications intended for clients that are not currently on-line. The notification server 30 may send some or all of these messages to the end user through other means such as email, postal mail or facsimile. Alternatively, it may deliver some or all of these messages to the clients 110-118 when they next register.” (col. 7, lines 36-45)

9. As describe above, the client registers the identity of the client process and receiving address identifier with a notification server. The registration information comprises the identity of the client process and a receiving address identifier (see above passage i). Gupta does not describe that the registration information indicates specific messages. The request that explicitly requests desired messages to which Applicants argued to is the notification request to one or more applications server. The request to the application server(s) for messages is not the same request as the registering request to the notification server. Therefore, when the client registers with the notification server, the client is not requesting the list of messages as argued by the Applicants, but rather registering to indicate that the client is available to receive messages. This is further supported in passage ii, wherein Gupta teaches of correlating online/offline to registration of clients with the notification server. When a client registers, i.e. goes online, message(s) are sent to the client. Gupta’s registering to indicate availability is considered as claims’ wait request.

10. Examiner also disagrees that without requesting the specific messages the client is interested in, registering is completely ineffective. Gupta teaches,

- iii) On receiving a message from the message monitor, the notification server 30 determines the intended recipients of the message using the databank of messages that the clients 110-118 wish to receive. The notification server 30 may refer directly to the databank maintained by an application server 20-24, or it may maintain a local copy of the databanks maintained by the application servers 20-24.” (col. 6, lines 12-19).

11. The notification server determines which specific messages to send to the client by contacting the one or more application(s) (see passage iii). Therefore, the client does not have to request the specific messages when registering contact information with the notification server. The registering is intended to

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indicate to the notification server that the client is available to receive the message(s) and not to re-request specific messages.

Specification

12. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Applicant is required to make appropriate amendment to the description to provide clear support or antecedent basis for the phrase "the computer readable storage medium" appearing in the claims provided no new matter is introduced.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

14. Claims 1-3, 6-23, 25-34, 36-45, 47-55, 58, 60-68 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

15. Regarding claims 1, 16, 19, 20-22, 33, 44, 45, 55, and 58, the amended feature of "the wait request is other than a request for information from the web server" is not supported by Applicant's specification. Applicant's specification dated 10/27/2001 describes wait request by disclosing of "to send the *wait request* 210 to web server 188 as part of a normal HTTP request" (page 12, lines 9-11), "*Wait request* 210 may correspond to a URL as shown in FIG. 5:" (page 16, lines 13-15), "Web server 188 provides information provided in *wait request* 210, such as target parameter 214 and Session_ID

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parameter 216..." (page 17, lines 12-13); "Placing the Request ID into wait map 570 "registers" web browser client 104A, which is uniquely associated with the Request ID, as a client that is available to receive an asynchronous message" (page 19, lines 12-14); and "To enable web browser client 104A to continue to receive asynchronous messages, Java applet 116 sends another *wait request*." (page 20, lines 29-30). However, the specification does not positively describe that the wait request is other than a request for information, and the absence of a positively recitation does not provide basis for the negative limitation.

16. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

17. Claims 1-3, 6-23, 25-34, 36-45, 47-55, 58, 60-68 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

18. Regarding claims 1, 16, 19, 20-22, 33, 44, 45, 55, and 58, the limitations of "the incoming event is an event other than a request for information" and "the wait request is other than request for information from the web server" are negative limitations. Regarding claim 23, the limitation of "the incoming event is an event other than a request for information from the web server" is a negative limitation. Regarding negative limitations, MPEP 2173.05(i) states,

Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. See *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) ("[the] specification, having described the whole, necessarily described the part remaining."). See also *Ex parte Grasselli*, 231 USPQ 393 (Bd. App. 1983), *aff'd mem.*, 738 F.2d 453 (Fed. Cir. 1984). The mere absence of a positive recitation is not basis for an exclusion. The court observed that the limitation "R is an alkenyl radical other than 2-butenyl and 2,4-pentadienyl" was a negative limitation that rendered the claim indefinite because it was an attempt to claim the invention by excluding what the inventors did not invent rather than distinctly and particularly pointing out what they did invent. *In re Schechter*, 205 F.2d 185, 98 USPQ 144 (CCPA 1953).

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19. Firstly, there is no basis for the limitations in the original disclosure to support the limitations. Secondly, the claims do not distinctly and particularly point out what the applicant regards as his/her invention, and by using phrases such as “other than”, it appears to be an attempt to claim the invention by excluding what the inventors did not invent or is not inventing.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

21. Claim 22 is rejected under 35 U.S.C. 102(e) as being anticipated by Gupta et al, US Patent #6,763,384 (Gupta hereinafter).

22. As per claim 22, Gupta teaches the invention as claimed including a method for communicating, Gupta's teachings comprising:

controlling a user interface presented by a web browser comprising (col. 5, lines 35-39. Web browser.):

causing the web browser to provide a wait request to a web server, wherein the wait request is associated with the web browser and a target from which an asynchronous message originates, and the wait request is other than a request for information from the web server (col. 5, lines 49-56. Client process registers with the server. Fig. 2A. Client process 110 included in browser 100. col. 8, lines 31-36. Inform server of event. Send message based on registered client process and event sent from one of the application servers.);

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generating the asynchronous message, the asynchronous message identifying the web browser as a recipient of the asynchronous message, the generating being performed by the target (col. 6, lines 54-61. Application server passes message to notification server. The message is of interest to the client. It is essential to generate the message.);

providing the asynchronous message to the web server (col. 6, lines 54-61. Application server passes message to notification server.); and

causing the web server to push the asynchronous message to the web browser in response to an incoming event, wherein the incoming event is an event other than a request for information from the web server (col. 6, lines 21-24. Server sends notification to online recipients. col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client. The event may also be the message received from the application server.),

the web browser presents a user interface change in response to the asynchronous message; and the incoming event is received by a communication server (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.).

Claim Rejections - 35 USC § 103

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 1-3, 6-21, 23, 25-34, 36-45, 47-55, 58, 60-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta, in view of Shaughnessy et al. US Patent #5,928,325 (Shaughnessy hereinafter).

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25. As per claims 1 and 16, Gupta teaches substantially the invention as claimed including a method for communicating comprising:

controlling a user interface presented by a web browser comprising:

causing a web server to push an asynchronous message to the web browser in response to an incoming event (col. 6, lines 21-24. Server sends notification to online recipients.), wherein the incoming event is an event other than a request for information from the web server (col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client. col. 6, lines 54-59. Sends messages/events received from an application server to the client. The event may also be a received message),

the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives the status.);

causing the web browser to provide a wait request to the web server wherein, the wait request is associated with the web browser, and the wait request is other than a request for information the web server (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54; col. 7, lines 44-45. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.); and

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a computer-readable storage medium configured to store the controlling module, the pushing module, the request providing module, the identifying module, identifying module, and and the associating module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

26. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

27. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

28. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Shaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

29. As per claim 19, Gupta teaches substantially the invention as claimed including a method for communication, comprising:

establishing a first connection between a web browser and a web server (col. 5, lines 45-53; col. 6, lines 59-61. Client communicates with notification server. col. 5, lines 36-39. Client comprises a web browser.);

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establishing a second connection between the web server and a business process server (col. 6, lines 57-59. Notification server receives messages from an application server.);

controlling a user interface presented by the web browser comprising:

registering the web browser with the business process server (col. 5, lines 41-45; col. 6, lines 54-56. Register to receive messages.);

providing the web server with an asynchronous message to push to the web browser, the providing being performed by the business process server (col. 6, lines 54-61. Send messages/events to notification server.) and the providing being performed in response to an incoming event, wherein the incoming event is an event other than a request for information from the web browser (col. 6, lines 54-56. Detect messages/events of interest.); and

causing the web server to push the asynchronous message to the browser (col. 6, lines 54-61. Send notification message to clients.); wherein the web browser performs a user interface change in response to the asynchronous message (col. 6, lines 60-61. Client displays messages.); and

the incoming event is received by a communication server (col. 5, lines 31-35; col. 6, lines 54-56. Detection of messages/events by application server. col. 6, lines 35-39. Change in bid.);

causing the web browser to provide a wait request to the web server, wherein the wait request is associated with the web browser, and the wait request is other than a request for information from the web server (col. 5, lines 49-54. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.).

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30. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

31. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Sahaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

33. As per claims 20, 33, and 44, Gupta teaches substantially the invention as claimed including a method, computer program product, computer system, and a system comprising:

a processor; a memory, the memory storing instructions for executing on the processor, the instructions comprising (col. 5, lines 5-9, 12-14. Computer system. Computers.):

controlling a user interface presented by a web browser comprising:

registering the web browser as available to receive an asynchronous message, wherein the web browser is not blocked waiting for the asynchronous message (col. 5, lines 49-53; col. 7, lines 44-45.

When the client process is ready, register the client process to receive messages.); and

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causing a web server to push an asynchronous message to the web browser in response to an incoming event, wherein the incoming event is an event other than a request for information from the web server (col. 6, lines 21-24. Server sends notification to online recipients. col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client. col. 6, lines 54-59. Sends messages/events received from an application server. The event may also be a received message.)

the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives information regarding client status.);

causing the web browser to provide a wait request to the web server wherein, the wait request is associated with the web browser, and the wait request is other than a request for information from the web server (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.); and

a computer-readable medium for storing the controlling instructions, the registering instructions, the pushing instructions, the providing instructions, the identifying instructions, and the associating instructions. a computer-readable medium for storing the controlling instructions, the pushing instructions (col. 5, lines 5-9, 12-14. Computer system. Computers.).

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34. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

35. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

36. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Sahaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

37. As per claim 21, Gupta teaches substantially the invention as claimed including a method for communicating, comprising:

controlling a user interface presented by a web browser comprising:

causing the web browser to provide a wait request to a web server, the wait request being associated with the web browser (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.), and the wait request is other than request for information from the web server (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54. Client registers the

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identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line. col. 7, lines 44-45. Client may re-register.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.).

pushing the asynchronous message to the web browser in response to an incoming event, wherein the incoming event is an event other than a request for information from the web server (col. 6, lines 21-24. Server sends notification to online recipients. col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client.), and

the browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.);

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives information regarding client status.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register.).

38. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

39. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the

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source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

40. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Shaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

41. As per claim 23, Gupta teaches substantially the invention as claimed including a computer program product comprising:

controlling instructions to control a user interface presented by a web browser comprising:

pushing instructions to cause a web server to push an asynchronous message to the web browser in response to an incoming event (col. 6, lines 21-24. Server sends notification to online recipients.), wherein the incoming event is an event other than a request for information from the web server (col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client.),

the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives the status.);

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providing instructions to cause the web browser to provide a wait request to the web server, the wait request being associated with the web browser(Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.); and

a computer-readable medium for storing the controlling instructions, the pushing instructions, the providing instructions, the identifying instructions, and the associating instructions (col. 5, lines 5-9, 12-14. Computer system. Computers.).

42. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

43. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

44. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Shaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to

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receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

45. As per claim 34, Gupta teaches substantially the invention as claimed including a computer system comprising:

a processor; a memory, the memory storing instructions for executing on the processor, the instructions comprising (col. 5, lines 5-9, 12-14. Computer system. Computers.):

controlling instructions to control a user interface presented by a web browser comprising:

pushing instructions to cause a web server to push an asynchronous message to the web browser in response to an incoming event (col. 6, lines 21-24. Server sends notification to online recipients. col. 6, lines 54-59. Sends messages/events received from an application server. The event may also be the received message.), wherein the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives the status.);

providing instructions to cause the web browser to provide a wait request to the web server, the wait request being associated with the web browser(Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.);

associating the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the

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client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.); and

46. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

47. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

48. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Shaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

49. As per claim 45, Gupta teaches substantially the invention as claimed including a system for communicating comprising:

a client computer comprising: a web browser, wherein the web browser presents a user interface (col. 5, lines 4-9, 36-39. Computing terminals. Web browser.);

a server computer coupled to the client computer (col. 5, lines 12-21. Servers as computers.), wherein the server computer comprises

controlling means for controlling the user interface presented by the web browser,

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pushing means for causing a web server to push an asynchronous message to the web browser in response to an incoming event (col. 6, lines 21-24. Server sends notification to online recipients.), wherein the incoming event is an event other than a request for information from the web server (col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client. col. 6, lines 54-59. Sends messages/events received from an application server to the client. The event may also be a received message),

the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives the status.);

associating means for associating a wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message, and (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.)

the client computer comprises providing means for causing the web browser to provide the wait request to the web server wherein, the wait request is associated with the web browser, and the wait request is other than a request for information the web server (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54; col. 7, lines 44-45. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.).

50. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

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51. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

52. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Shaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

53. As per claim 55, Gupta teaches substantially the invention as claimed including a system comprising:

a client computer comprising: a web browser (col. 5, lines 4-9, 36-39. Computing terminals. Web browser.), wherein the web browser presents a user interface; a server computer coupled to the client computer, wherein the server computer comprises (col. 5, lines 5-9, 12-14. Computer system. Computers.):

controlling means for controlling a user interface presented by a web browser comprising:

registering means for registering the web browser as available to receive an asynchronous message, wherein the web browser is not blocked waiting for the asynchronous message (col. 5, lines 49-53; col. 7, lines 44-45. When the client process is ready, register the client process to receive messages.); and

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pushing means for causing a web server to push an asynchronous message to the web browser in response to an incoming event, wherein the incoming event is an event other than a request for information from the web server (col. 6, lines 21-24. Server sends notification to online recipients. col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client. col. 6, lines 54-59. Sends messages/events received from an application server. The event may also be a received message.)

the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives information regarding client status.);

associating means for associating a wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.);

the client computer comprises providing means for causing the web browser to provide the wait request to the web server wherein, the wait request is associated with the web browser, and the wait request is other than a request for information from the web server (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.); and

54. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

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55. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

56. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Sahaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

57. As per claim 58, Gupta teaches substantially the invention as claimed including a system for communicating comprising:

controlling module to control a user interface presented by a web browser comprising:

a pushing module to cause a web server to push an asynchronous message to the web browser in response to an incoming event (col. 6, lines 21-24. Server sends notification to online recipients.), wherein the incoming event is an event other than a request for information from the web server (col. 8, lines 39-45. Client sends message to go off-line. The incoming event is an online indication of the client. col. 6, lines 54-59. Sends messages/events received from an application server to the client. The event may also be a received message),

the web browser presents a user interface change in response to the asynchronous message (col. 5, lines 36-39. Web browser. col. 6, lines 59-61. Client displays messages.), and

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the incoming event is received by a communication server (col. 6, lines 10-12. Server updates clients that are on-line. It is inherent that a process receives the status.);

a request providing module to cause the web browser to provide a wait request to the web server wherein, the wait request is associated with the web browser, and the wait request is other than a request for information the web server (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54; col. 7, lines 44-45. Client registers the identity of the client process and receiving address. col. 6, lines 10-12. Server updates clients that are on-line.);

an associating module to associate the wait request with a "asynchronous message", wherein the associating identifies web browser as a recipient of the asynchronous message (col. 6, lines 22-24; col. 8, lines 41-44, 54-56. Identify active clients and message to determine intended recipients. col. 5, lines 49-57. Register the client when the client is ready to receive message. col. 7, lines 44-45. Send stored messages when the clients next register. Therefore, the client registration is associated with the message.); and

a computer-readable storage medium configured to store the controlling module, the pushing module, the request providing module, the identifying module, identifying module, and the associating module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

58. Gupta does not specifically teach of identifying a source of the asynchronous message. Gupta teaches of associating a wait request with a message but not specifically with the source.

59. Sahaughnessy teaches of a system for sending messages comprising: identifying a source of the asynchronous message (col. 5, lines 21-26. User-device selected rules may involve factors including the source of the message. col. 4, line 37-40. Email.); and associating registered client devices with the source (col. 5, lines 10-14, 18-22. Determine available device to send a message using user-device selected rules.).

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60. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings to identify a source of the asynchronous message and to associate a registered client with the source as taught by Sahaughnessy such that the wait request registering the client as taught by Gupta is associated with the source. The motivation for the suggested combination is that Shaughnessy's teachings would provide an improvement to Gupta's teachings by allowing a client to receive messages on differently available client devices (col. 5, lines 60-67) and enabling dynamic establishment of communications of incoming messages to one or more user device (col. 3, lines 20-25).

61. As per claim 2, Gupta teaches the method of claim 1 further comprising: generating the asynchronous message (col. 6, lines 59-61; col. 8, lines 37-40. Send messages. It is inherent that the messages are generated in order to send the message to the client.).

62. As per claim 3, Gupta teaches the method of claim 1 further comprising: preparing to receive the asynchronous message (col. 6, lines 59-61. Client receives and displays messages. col. 7, lines 10-13. Server opens connection with client.).

63. As per claim 6, Gupta teaches the invention comprising:
generating instructions to generate the asynchronous message, the asynchronous message identifying the wait request, wherein the identifying identifies the web browser as a recipient of the message (col. 6, lines 21-24, 54-61. Generate event of interest for the client. Message is married to the client's receiving address.); and
message providing instructions to provide the asynchronous message to the web server (col. 8, lines 31-40. Server informed of event.).

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64. As per claim 7, Gupta teaches the method of claim 6, wherein causing the web browser to provide the wait request comprises: downloading requesting instructions to the web browser, wherein downloading causes the web browser to execute the requesting instructions (col. 5, lines 60-col. 6, lines 9. Download client process and invoke client process automatically or manually.).

65. As per claims 8, 26, and 37, Gupta teaches the invention comprising:
storing instructions to store a reference to a callback function with information from the wait request (col. 5, lines 49-56; col. 8, lines 18-24. Registers receiving identifier. Col 8, lines 15-17. Enroll to receive messages.); and

using instructions to use the reference to call the callback function when the message is provided to the web server, wherein the callback function pushes the message (col. 8, lines 34-40. Sends events/messages received from application server using receiving identifier of client.).

66. As per claims 9, 27, and 38, Gupta teaches the invention comprising: context providing instructions to provide the callback function with context information, the context information identifying the web browser (col. 5, lines 49-56; col. 7, lines 44-45; col. 8, lines 18-24. Registers receiving identifier. col. 8, lines 15-17. Enroll to receive messages.).

67. As per claims 10, 28, and 39, Gupta teaches the invention comprising:
assigning instructions to assign the wait request to a connection between the web server and a business process server (col. 6, lines 12-24. Notification server correlates registered client with messages received from application server. col. 8, lines 34-37. Determine recipients for notification when provided with messages/events.); and

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listening instructions to listen to the connection for the message (col. 6, lines 54-56. Inform notification server of messages/events from application server.).

68. As per claim 11, Gupta teaches the invention comprising:

assigning instructions to assign the wait request to a session between the web server and a business process server, the session being associated with a connection (col. 6, lines 12-24. Notification server correlates registered client identity with messages received from application server. col. 8, lines 34-37. Determine recipients for notification when provided with messages/events.); and

listening instructions to listen to the connection for the message (col. 6, lines 54-56. Inform notification server of messages/events from application server.).

69. As per claims 12, 29, and 40, Gupta teaches the invention comprising: calling instructions to call a callback function associated with the web browser when the message is received, wherein the callback function pushes the message (col. 5, lines 49-56; col. 7, lines 44-45; col. 8, lines 18-24. Registers identifier of client process. col. 8, lines 34-40. Sends events/messages received from application server using receiving identifier of client.).

70. As per claims 13, 30, and 41, Gupta teaches the invention comprising:

reference storing instructions to store a reference to the callback function (col. 5, lines 41-56; Col 8, lines 18-24. Registers receiving identifier and list of desired messages. col. 8, lines 15-17. Enroll to receive messages.) and

reference using instructions to use the reference for calling the callback function (col. 6, lines 54-56. Identify events/messages of interest to clients. col. 8, lines 34-40. Send events/messages received from application server using receiving identifier of client.);

71. As per claims 14, 31, and 42, Gupta teaches the invention comprising:

context storing instruction to store a second reference to context information, the context information identifying the web browser (col. 5, lines 54-56. Identifier could be address and port with the protocol.) and

context using instructions to use the second reference for providing the context information to the callback function (col. 8, lines 34-40. Send events/messages received from application server using receiving identifier of client.).

72. As per claims 15, 18, 32, and 43, Gupta teaches the invention wherein the change in the user interface comprises at least one of a group consisting of the following: causing a first user interface object to move to visually capture a user's attention; causing a second user interface object to issue a sound to capture the user's attention; presenting a screen pop of data; and bringing a web browser window to the front of a screen (col. 6, lines 59-61. On-line client displays the messages to the end user.).

73. As per claim 17, Gupta teaches the method of claim 16, wherein the message includes an action instruction to cause the web browser to perform the action (col. 6, lines 59-61. Display message.).

74. As per claim 25 and 36, Gupta teaches the invention comprising:

requesting providing instructions to cause the web browser to provide a wait request to the web server, the wait request being associated with the web browser (Fig. 2A. Client process 110 included in browser 100. col. 5, lines 49-54; col. 7, lines 44-45. Client registers the identity of the client process and receiving address.);

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generating instructions to generate the asynchronous message, the asynchronous message identifying the wait request, wherein the identifying identifies the web browser as a recipient of the message (col. 6, lines 21-24, 54-61. Generate message/event of interest for the client. Message is married to the client's receiving address.); and

message providing instructions to provide the asynchronous message to the web server (col. 8, lines 31-34. Notification generated for client process and sent.).

75. As per claim 47, Gupta teaches the system of claim 45, the server computer, further comprising:

generating means for generating the asynchronous message, the asynchronous message identifying the wait request, wherein the identifying identifies the web browser as a recipient of the message (col. 6, lines 21-24, 54-61. Generate message/event of interest for the client. Message is married to the client's receiving address.); and

message providing means for providing the asynchronous message to the web server (col. 8, lines 31-34. Notification generated for client process and sent.).

76. As per claim 48, Gupta teaches the system of claim 47, the server computer further comprising:

storing means for storing a reference to a callback function with information from the wait request (col. 5, lines 49-56; col. 8, lines 18-24. Registers receiving identifier. Col 8, lines 15-17. Enroll to receive messages.); and

using means for using the reference to call the callback function when the message is provided to the web server, wherein the callback function pushes the message (col. 8, lines 34-40. Sends events/messages received from application server using receiving identifier of client.).

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77. As per claim 49, Gupta teaches the system of claim 48, the client computer further comprising: context providing means for providing the callback function with context information, the context information identifying the web browser (col. 5, lines 49-56; col. 7, lines 44-45; col. 8, lines 18-24. Registers receiving identifier. col. 8, lines 15-17. Enroll to receive messages.).

78. As per claim 50, Gupta teaches the system of claim 47, the server computer comprising: assigning means for assigning the wait request to a connection between the web server and a business process server (col. 6, lines 12-24. Notification server correlates registered client with messages received from application server. col. 8, lines 34-37. Determine recipients for notification when provided with messages/events.); and

listening means for listening to the connection for the message (col. 6, lines 54-56. Inform notification server of messages/events from application server.).

79. As per claim 51, Gupta teaches the system of claim 45, wherein the pushing means comprise: calling means for calling a callback function associated with the web browser when the message is received, wherein the callback function pushes the message (col. 5, lines 49-56; col. 7, lines 44-45; col. 8, lines 18-24. Registers identifier of client process. col. 8, lines 34-40. Sends events/messages received from application server using receiving identifier of client.).

80. As per claim 52, Gupta teaches the system of claim 51, the server computer comprising: reference storing means for storing a reference to the callback function (col. 5, lines 41-56; Col 8, lines 18-24. Registers receiving identifier and list of desired messages. col. 8, lines 15-17. Enroll to receive messages.) and

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reference using means for using the reference for calling the callback function (col. 6, lines 54-56. Identify events/messages of interest to clients. col. 8, lines 34-40. Send events/messages received from application server using receiving identifier of client.);

81. As per claim 53, Gupta teaches the system of claim 52, the server computer further comprising:
context storing means for storing a second reference to context information, the context information identifying the web browser (col. 5, lines 54-56. Identifier could be address and port with the protocol.) and

context using means for using the second reference for providing the context information to the callback function (col. 8, lines 34-40. Send events/messages received from application server using receiving identifier of client.).

82. As per claim 54, Gupta teaches the system of claim 45, the client computer further comprising:
the user interface changing means configured to perform at least one of a group consisting of the following: causing a first user interface object to move to visually capture a user's attention; causing a second user interface object to issue a sound to capture the user's attention; presenting a screen pop of data; and bringing a web browser window to the front of a screen (col. 6, lines 59-61. On-line client displays the messages to the end user.).

83. As per claim 60, Gupta teaches the system of claim 58, further comprising:
a generating means to generate the asynchronous message, the asynchronous message identifying the wait request, wherein the identifying identifies the web browser as a recipient of the message (col. 6, lines 21-24, 54-61. Generate message/event of interest for the client. Message is married to the client's receiving address.); and

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a message providing module to provide the asynchronous message to the web server (col. 8, lines 31-34. Notification generated for client process and sent.), wherein

the computer readable storage medium is configured to store the generating module and message providing module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

84. As per claim 61, Gupta teaches the system of claim 60, further comprising:

a storing module to store a reference to a callback function with information from the wait request (col. 5, lines 49-56; col. 8, lines 18-24. Registers receiving identifier. Col 8, lines 15-17. Enroll to receive messages.); and

a using module to use the reference to call the callback function when the message is provided to the web server, wherein the callback function pushes the message (col. 8, lines 34-40. Sends events/messages received from application server using receiving identifier of client.), wherein the computer readable storage medium is configured to store the storing module and using module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

85. As per claim 62, Gupta teaches the system of claim 61, further comprising:

a context providing module to provide the callback function with context information, the context information identifying the web browser (col. 5, lines 49-56; col. 7, lines 44-45; col. 8, lines 18-24. Registers receiving identifier. col. 8, lines 15-17. Enroll to receive messages.), wherein

the computer readable storage medium is configured to store the context providing module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

86. As per claim 63, Gupta teaches the system of claim 60, further comprising:

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an assigning module to assign the wait request to a connection between the web server and a business process server (col. 6, lines 12-24. Notification server correlates registered client with messages received from application server. col. 8, lines 34-37. Determine recipients for notification when provided with messages/events.); and

listening module to listen to the connection for the message (col. 6, lines 54-56. Inform notification server of messages/events from application server.), wherein

the computer readable storage medium is configured to store the assigning module and listening module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

87. As per claim 64, Gupta teaches the system of claim 58 wherein the pushing means comprise:

a calling module to call a callback function associated with the web browser when the message is received, wherein the callback function pushes the message (col. 5, lines 49-56; col. 7, lines 44-45; col. 8, lines 18-24. Registers identifier of client process. col. 8, lines 34-40. Sends events/messages received from application server using receiving identifier of client.), wherein

the computer readable storage medium is configured to store the calling module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

88. As per claim 65, Gupta teaches the system of claim 64, further comprising:

a reference storing module to store a reference to the callback function (col. 5, lines 41-56; Col 8, lines 18-24. Registers receiving identifier and list of desired messages. col. 8, lines 15-17. Enroll to receive messages.) and

a reference using module to use the reference for calling the callback function (col. 6, lines 54-56. Identify events/messages of interest to clients. col. 8, lines 34-40. Send events/messages received from application server using receiving identifier of client.), wherein

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the computer readable storage medium is configured to store the reference storing module and the reference using module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

89. As per claim 66, Gupta teaches the system of claim 65, further comprising:

a context storing module to store a second reference to context information, the context information identifying the web browser (col. 5, lines 54-56. Identifier could be address and port with the protocol.) and

a context using module to use the second reference for providing the context information to the callback function (col. 8, lines 34-40. Send events/messages received from application server using receiving identifier of client.), wherein

the computer readable storage medium is configured to store the context storing module and the context using module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

90. As per claim 67, Gupta teaches the system of claim 58, further comprising:

a user interface changing module configured to perform at least one of a group consisting of the following: causing a first user interface object to move to visually capture a user's attention; causing a second user interface object to issue a sound to capture the user's attention; presenting a screen pop of data; and bringing a web browser window to the front of a screen (col. 6, lines 59-61. On-line client displays the messages to the end user.), wherein

the computer readable storage medium is configured to store the user interface changing module (col. 5, lines 5-9, 12-20. Computer system. Computers with storage media.).

91. As per claim 68, Gupta teaches the method of claim 1 further comprising:

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opening a persistent hypertext transfer protocol (HTTP) connection between the web browser and the web server when a user logs in (col. 7, lines 44-45. Deliver messages when the client registers.); and closing the persistent HTTP connection between the web browser and the web server in response to the web server pushing the asynchronous message to the web browser (col. 7, lines 10-14. Closes the connection after sending the notification. It is inherent that the connection was open to send the notification.).

Conclusion

92. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

93. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua Joo whose telephone number is 571 272-3966. The examiner can normally be reached on Monday to Friday 7 to 4.

94. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571 272-1915. The fax phone number for the organization where this application or proceeding is assigned 571-273-8300.

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95. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/J. J./

Examiner, Art Unit 2454

/Nathan J. Flynn/

Supervisory Patent Examiner, Art Unit 2454